

REMARKS

Entry of this Preliminary Amendment before continued examination of the instant application is respectfully requested. Upon entry of this Amendment, claims 1-35 remain in the application. Claims 15-35 have been withdrawn. New claims 36 and 37 have been added to set forth additional specific embodiments of Applicant's invention. Claims 1 and 8 have been amended to insert phrases to the effect that the heating device also generates a temperature which assists with the biological assay, in addition to generating the temperature that pyrolyzes the biological sample. Claim 1 also inserts a phrase that recites that the substrate interacts with the biological substrate "in at least one assay." Both claims 1 and 8 also insert a phrase that describes the pyrolyzation of the biological sample as being for the purpose of decontaminating the biochip. It is submitted that these phrases have support in the specification. As such, no new matter has been added. Reconsideration of the claims is respectfully requested.

Withdrawal of the previous rejection of claims 1-2, 4-5, 8-11 and 13 under 35 U.S.C. § 102(e) is noted and appreciated.

Claims 1-14 stand rejected under 35 USC § 103 (a) as being unpatentable over Wilding in view of Mowry and/or Doung.

The Examiner admits that Wilding does not disclose that the heating device, which is used to assist the reagent components in interacting with the nucleic acid samples in the disposable biochip, is configured to generate heat sufficient to pyrolyze the nucleic acid sample. Yet the Examiner combines Wilding with either Mowry or Doung, which allegedly teach a biochip with a heating device capable of pyrolyzation. By combining Wilding, with either Mowry or Doung, the Examiner asserts that the present invention would be obvious to one skilled in the art.

Applicant's invention as defined in the pending claims relates to a disposable biochip with components in the biochip substrate which are configured to interact with a biological substance in an assay in which a heating device integrated with the substrate serves both to generate heat at a temperature appropriate for the assay

and heat at a temperature appropriate to pyrolyze and decontaminate the disposable biochip.

Independent claims 1 and 36 recite a heating device integrated with the substrate to provide both heat for the assay as well as heat for the pyrolysis resulting in the biochip's decontamination. Such an invention is by no means disclosed by a combination of either Wilding and Mowry or Wilding and Doung.

Wilding teaches a disposable biochip with a heating device on the substrate which serves to provide heat to the assay on the biochip, but does not serve the dual function of providing heat for decontamination by pyrolysis. Mowry teaches a non-disposable biochip with a micropyrolyzer that is part of a chemical analyzer. The micropyrolyzer is first of all, unlike the biochip of Wilding, not intended to be disposable, but is rather a permanent part of a chemical analyzer system. Second of all, the micropyrolyzer in Mowry serves the purpose of vaporizing samples for analysis in the chemical analyzer system. It does not destroy the samples with high temperatures for the purpose of decontamination as in the presently claimed invention. Therefore, one skilled in the art who was familiar with both Wilding and Mowry would not be led to use the micropyrolyzer device of Mowry in the disposable biochip of Wilding. This is because, in terms of expense alone, the micropyrolyzer would not be appropriate for use in a disposable biochip, nor would it lend itself to the high temperatures needed for the complete decontamination of the biochip.

By the same token, Wilding in combination with Doung would not suggest the presently claimed invention. Doung does teach the use of a thermal controller for controlled pyrolysis. However, the thermal controller is not part of the biochip. Furthermore, the thermal controller heats not just one but many biochips at a time, the biochips being contained in a cartridge at the time of heating. This thermal controller of Doung is certainly not integrated into the individual biochip, nor could it be, in the way of the heating device in the presently claimed invention. In addition, because it is not integrated into the individual biochip, the thermal controller of Doung

could not also be used as a source of the controlled heat necessary to conduct the assay on any or all of the biochips that it pyrolyses.

In view of the foregoing, Applicant submits that claims 1-14 and new claims 36 and 37 present allowable subject matter, and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is cordially invited to contact Applicant's Attorney at the below-listed telephone number, so that such issues may be resolved as expeditiously as possible.

Respectfully submitted,

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